

Code: 13A02803

B.Tech IV Year II Semester (R13) Regular & Supplementary Examinations April 2018

HVDC TRANSMISSION

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) What is break even distance?
 - (b) What is meant by static conversion?
 - (c) Define the pulse number of a converter.
 - (d) What is meant by commutation of valve?
 - (e) Differentiate PFC and PPC schemes.
 - (f) List high level controllers for converter station.
 - (g) Define non characteristic harmonics.
 - (h) List the types of AC filters.
 - (i) What is meant by "Arc through"?
 - (j) What are the disturbances on the DC side of converter station?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 With a neat schematic, describe the purpose and applications of converter station components.
- OR**
- 3 Explain power handling capabilities of HVDC transmission links.

UNIT – II

- 4 Explain the operation of 12-pulse converter with no firing delay.
- OR**
- 5 Describe the operation and commutation sequence of a 3-pulse converter station.

UNIT – III

- 6 Describe the hierarchical control structures used in HVDC link control.
- OR**
- 7 Explain the basic characteristics of converter control.

UNIT – IV

- 8 What are AC filters in DC converter stations? Explain their role in control of DC harmonics.
- OR**
- 9 What are DC filters? Explain how they differ from AC filters and their design principles.

UNIT – V

- 10 Describe the typical arrangement of surge arrester for a converter pole.
- OR**
- 11 Explain the types of over voltages occurred in converter stations.
